UNITED STATES PATENT AND TRADEMARK OFFICE

𝐴

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/964,822	09/25/2001	Anthony M. Zilka	042390.P12009	2633

7590   08/09/2005

Peter Lam
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP
Seventh Floor
12400 Wilshire Boulevard
Los Angeles, CA 90025-1026

EXAMINER
DU, THUAN N

ART UNIT	PAPER NUMBER
2116	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/964,822	ZILKA, ANTHONY M.
	Examiner	Art Unit	
	Thuan N. Du	2116	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _16 May 2005_.

2a) ☒ This action is FINAL.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-12 and 20-30_ is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-12 and 20-30_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

   1.☐ Certified copies of the priority documents have been received.

   2.☐ Certified copies of the priority documents have been received in Application No. _____.

   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
   application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.　It is hereby acknowledged that the following papers have been received and placed of record in the file: Amendment (dated 5/16/05).

2.　Claims 13-19 have been cancelled. Claims 1-12 and 20-30 are presented for examination.

3.　The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4.　The rejections are respectfully maintained and reproduced infra for applicant's convenience.

Claim Rejections - 35 USC § 103

5.　Claims 1-6, 8, 11, 12 and 20-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iacobovici et al. [Iacobovici] (U.S. Patent No. 6,704,876).

6.　Regarding claim 1, Iacobovici teaches a method comprising:

estimating a first event (estimated CPU power dissipation is greater than PHWM value) that allows for lower performance in a processor [col. 4, lines 5-10];

transitioning said processor from a high performance state to a low performance state upon estimation of said first event [col. 4, lines 11-14];

detecting a second event (estimated CPU power dissipation is smaller than PLWM value) that can utilize greater performance in said processor [col. 4, lines 15-21]; and

transitioning said processor from said low performance state to said high performance

state upon detection of said second event [col. 4, lines 21-22].

Iacobovici does not explicitly teach that the occurrence of the first event is predicted.

However, Iacobovici teaches that the power dissipation of the CPU is *estimated*, not 100 percent

accurate. Therefore, one of ordinary skill in the art would have recognized that Iacobovici

obviously predicts when the CPU could be slowed down.

7.   Regarding claim 2, Iacobovici teaches that cache miss event is detected [col. 2, lines 60-

62].

8.   Regarding claim 3, Iacobovici teaches that cache miss event causes the CPU to fetch data

from external memory [col. 2, lines 62-64].

9.   Regarding claim 4, Iacobovici teaches that the incoming data from the memory fetch is

detected [col. 4, lines 38-43].

10.   Regarding claim 5, Iacobovici teaches that cache miss event causes the CPU to stall

instruction pipeline (CPU is pipeline-based) [Fig. 4; col. 3, line 21-22].

11.   Regarding claim 6, Iacobovici teaches that CPU signal (CPU operation) is monitored [in

order to estimate the power dissipation of the CPU, the operation of the CPU must be

monitored].

12.   Regarding claim 8, Iacobovici teaches that high performance state consumes a greater

amount of power than low performance state [col. 1, lines 51-62].

13.   Regarding claim 11, Iacobovici teaches that the transitioning from a high performance

state to a low performance state further comprises slowing down an internal processor core clock

signal from a normal operating frequency to a lower frequency [col. 4, lines 10-13].

14.   Regarding claim 12, Iacobovici teaches that the transitioning from said low performance state to said high performance state comprises speeding up said internal processor core clock signal to said normal operating frequency [col. 4, lines 21-23].

15.   Regarding claims 20-25, Iacobovici teaches the claimed method steps. Therefore, Iacobovici teaches the apparatus to implement the claimed method steps.

16.   Regarding claims 26-30, Iacobovici teaches the claimed method steps. Therefore, Iacobovici teaches the instructions stored in a machine readable medium for carrying out the claimed method steps.

17.   Claims 7, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iacobovici et al. [Iacobovici] (U.S. Patent No. 6,704,876) and Kardach et al. [Kardach] (U.S. Patent No. 6,014,751].

18.   Regarding claims 7, 9 and 10, Iacobovici teaches that the CPU comprises a plurality of functional units [Fig. 4; col. 3, lines 34-65]. Iacobovici does not explicitly teach that those functional units could be selectively powering down and powering up.

Kardach teaches a processor (processor 14 of Figs. 4, 5) comprises a plurality of functional units, wherein the functional units could be selectively powering down [col. 5, lines 49-63; col. 4, lines 5-8, 40-49].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Iacobovici to power down and power up selected functional units as taught by Kardach because it would reduce the power consumption of the CPU and maintain the cache coherency of the system.

Response to Argument

19.   Applicant's argument filed on May 16, 2005 has been fully consideration but they are not persuasive.

20.   In the remarks, applicant argued in substance that "the terms estimated and predicted do not mean the same thing and cannot be considered to be the same." Examiner respectfully partially disagrees. Examiner agrees that the Merriam-Webster Dictionary has two definitions for the terms predict and estimate. In some degree, the terms predict and estimate might not mean the same thing. However, in some other degree, both the terms predict and estimate describe the same thing. In Roget's International Thesaurus, the term predict is defined as guess; and the term estimate is also defined as guess. Therefore, the terms predict and estimate mean the same thing: guess. Since the claim does not describe how the prediction was made and how the predicting is different from the estimating, therefore, with the broadest reasonable interpretation, the terms predict and estimate could be considered to be the same.

Conclusion

21.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
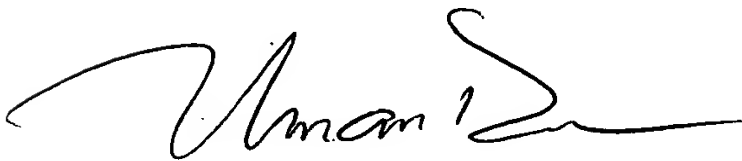
22.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan N. Du whose telephone number is (571) 272-3673. The examiner can normally be reached on Monday-Friday: 9:00 am - 5:30 pm, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H. Browne can be reached on (571) 272-3670.

Central TC telephone number is (571) 272-2100.

The fax number for the organization is (571) 273-8300.

23.   Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Thuan N. Du
July 29, 2005